

IN THE CLAIMS:

Please amend the claims as follows:

1. (Currently Amended) A system with a mobile micro-robot for use inside an animal body during minimally invasive surgery, comprising:

a laparoscopic surgical tool, wherein the micro-robot is adapted to fit through a port of the laparoscopic surgical tool;

a body for incorporating components of the micro-robot;

a mobilization element coupled to the body for moving the body of the micro-robot within the animal body, the mobilization element comprising two wheels disposed along a longitudinal dimension of the body and having an axis of rotation substantially parallel to the longitudinal dimension;

a member disposed between the two wheels and extending from the body in a direction substantially perpendicular to the axis of rotation of the two wheels for converting rotational motion of the wheels into translational motion;

a controller for controlling remotely the mobilization element;

an actuator coupled to the controller and mobilization element, the actuator configured to provide movement to the mobilization element based on input from the controller;

a power supply adapted to power the actuator; and

at least one device selected from (i) a manipulator arm extending from the body of the micro-robot, the manipulator arm having a free end defining a tip and being movable to assist in surgical tasks and (ii) at least one sensor proximate the body of the micro-robot for monitoring at least one parameter within the animal body.

2. (Canceled)

3. (Previously Presented) The system of claim 1, wherein the body is shaped like a cylinder.

4-5. (Canceled)

6. (Currently Amended) The system of claim ~~[[5]]~~ ¹, wherein the ~~one or more~~ wheels have treads.

7-8. (Canceled)

9. (Previously Presented) The system of claim 1, further comprising a transmitter and a receiver for sending data and inputting command signals between the micro-robot and a remote location.

10-15. (Canceled)

16. (Previously Presented) The system of claim 1, wherein the at least one device includes the at least one sensor that is selected from at least one member of the group consisting of a camera, an imaging device, a pH sensor, a temperature sensor, a sensor to detect gasses, a sensor to detect electrical potential, a sensor to detect heart rate, a sensor to detect respiration rate, a sensor to detect humidity, and a sensor to detect blood.

17. (Previously Presented) The system of claim 1, wherein the at least one device includes the at least one sensor that comprises an imaging device.

18. (Previously Presented) The system of claim 1, wherein the mobile micro-robot is wireless.

19-22. (Canceled)

23. (Previously Presented) The system of claim 17, wherein the imaging device is movable relative to the body of the micro-robot to adjust a position of the imaging device.

24. (Previously Presented) The system of claim 23, wherein the position is pan, tilt or combinations thereof.

25. (Previously Presented) The system of claim 1, wherein the at least one device includes the manipulator arm that is articulated and is movable at joints along a length thereof to enable multiple degrees of movement of the tip.

26. (Currently Amended) A mobile micro-robot for use inside an animal body during minimally invasive surgery, comprising:

a body for incorporating components of the micro-robot;

at least one device selected from (i) a manipulator arm extending from the body of the micro-robot, the manipulator arm having a free end defining a tip and being movable to assist in surgical tasks and (ii) at least one sensor proximate the body of the micro-robot for monitoring at least one parameter within the animal body; and

a mobilization assembly coupled to the body for actively moving the body of the micro-robot transverse to a length of the micro-robot during surgery along a surface within an open space inside the animal body, wherein the mobilization assembly comprises two wheels disposed at each end of the body and having an axis of rotation substantially parallel to the length of the micro-robot; and

a member disposed between the two wheels and extending from the body in a direction substantially perpendicular to the axis of rotation of the two wheels for converting rotational motion of the wheels into translational motion ~~is remotely controlled.~~

27. (Currently Amended) A method of performing minimally invasive surgery inside an animal body, comprising:

performing an incision in the animal body;

implanting a micro-robot through the incision into an open space inside the animal body, the micro-robot having a remotely controllable mobilization assembly and at least one device selected from (i) a remotely controllable manipulator arm for

performing a surgical task and (ii) a sensor for monitoring at least parameter within the animal body; and

actively moving the micro-robot along a surface inside the animal body within the open space by ~~operation~~ driving two wheels of the mobilization assembly, wherein the two wheels have an axis of rotation substantially parallel to a length of the micro-robot and are separated from one another along the length of the microrobot by a member extending in a direction substantially perpendicular to the axis of rotation of the two wheels for converting rotational motion of the wheels into translational motion capable of moving the micro-robot transverse to the length of the micro-robot.

28. (Previously Presented) The method of claim 27, further comprising viewing images within the animal body with the sensor.

29. (Previously Presented) The method of claim 27, further comprising viewing images within the animal body with the sensor and performing a surgical task by operation of the manipulator arm.

30. (Previously Presented) The method of claim 27, wherein implanting the micro-robot includes disposing the micro-robot within a cavity external to organs of the animal body, the cavity selected from at least one of an abdominal cavity, a pelvic cavity and a thoracic cavity.

31. (Previously Presented) The method of claim 27, wherein implanting the micro-robot includes disposing the micro-robot outside of a gastrointestinal tract.

32. (Previously Presented) The mobile micro-robot of claim 26, wherein the mobilization assembly is adapted for use within a cavity external to organs of the animal body, the cavity selected from at least one of an abdominal cavity, a pelvic cavity and a thoracic cavity.

33. (Previously Presented) The mobile micro-robot of claim 26, wherein the open space is inside an abdominal cavity.
34. (Previously Presented) The mobile micro-robot of claim 26, wherein the open space is outside of a gastrointestinal tract.
35. (Canceled)
36. (Currently Amended) The mobile micro-robot of claim ~~[[35]]~~ 26, wherein the two wheels have treads.
37. (Previously Presented) The mobile micro-robot of claim 26, wherein the at least one device includes the manipulator arm that is articulated and is movable at joints along a length thereof to enable multiple degrees of movement of the tip and the at least one sensor that comprises an imaging device.
38. (New) The mobile micro-robot of claim 26, wherein a majority of an external surface area of the micro-robot is provided by the wheels.
39. (New) The mobile micro-robot of claim 26, wherein the mobilization assembly enables turning movement of the body and forward and backward movement of the body transverse to the length of the micro-robot.
40. (New) The mobile micro-robot of claim 26, wherein the mobilization assembly is remotely controlled.